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7) Develop a java program that prints all
real solutions to the quadratic equation
$ax^2 + bx + c = 0$. Read a, b, c and use the quadratic
formula. If the discriminate $b^2 - 4ac$ is negative,
display a message stating that there are
no real solutions.

```
import java.util.*;
class Quad {
Scanner sc = new Scanner (System.in);
int a, b, c, d;
double r1, r2, d-sq;

void input () {
System.out.println ("Enter coefficients a, b, c:");
a = sc.nextInt ();
b = sc.nextInt ();
c = sc.nextInt ();
}


Void calc () {
int d = b*b - 4*a*c;
System.out.println (d);
if (d==0) {
r1 = -b/ (2.0*a);
System.out.println ("Roots are real and equal");
System.out.println ("Root 1 = "+r1+ "\n Root 2 = "+r1);
}
```

```java
else if (d>0) {
d_sq = Math.sqrt(d);
r1 = (-b + d_sq)/(2.0*a);
r2 = (-b + d_sq)/(2.0*a);
System.out.println("Roots are imaginary");   real and distinct
System.out.println("Root1 = "+r1+"\n Root 2 ="+r2);
}

else {
d_sq = Math.sqrt(-d);
r1 = -b/(2.0*a);
r2 = d_sq/(2.0*a);
System.out.println("Roots are imaginary");
System.out.println("Root1 = "+r1+" + "+ r2+ "i" +
    "\n Root 2 = "+r1+" - "+r2+"i");
}}}


class Quadratic {
public static void main (String[] args) {
Quad quad = new Quad();
quad.input();
quad.calc();
}
}
```

Output
enter coefficients a, b, c

1

5

6

Roots are real and distinct
Root 1 = 2.0
Root 2 = 2.0

enter coefficients a, b, c

1

1

1

Roots are imaginary
Root1 = -0.5 + 0.866025403784438 i
Root2 = -0.5 + 0.866025403784438 i .

Enter coefficient a, b, c

4

12

9

Roots are real and equal
Root 1 = -1.5
Root 2 = -1.5

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